

We claim:

1. A method of removing sulfur compounds from hydrocarbon-containing gases, wherein copper-containing catalysts are used at from -50 to 150°C and a pressure of from 0.1 to 10 bar.
2. A method of removing sulfur compounds from hydrocarbon-containing gases as claimed in claim 1, wherein temperatures of from 0 to 50°C and a pressure of from 0.8 to 1.5 bar are employed.
3. A method of removing sulfur compounds from hydrocarbon-containing gases as claimed in claim 1, wherein the copper-containing catalysts comprise from 30 to 99.8% by weight of copper oxide and from 0.2 to 70% by weight of oxides of elements of groups IIB, IIIB, IVB, VIB, VIII, IIIA, and IVA of the Periodic Table of the Elements which are solids up to at least 250°C.
4. A method of removing sulfur compounds from hydrocarbon-containing gases as claimed in claim 1, wherein the copper-containing catalysts comprise from 30 to 99.8% by weight of copper oxide and from 0.2 to 70% by weight of oxides of elements of groups IIB, IIIB, IVB, VIB, VIII, IIIA, and IVA of the Periodic Table of the Elements which are solids up to at least 250°C.
- 30 5. The use of a method as claimed in any of claims 1, 2, 3 and 4 for producing sulfur-free hydrocarbon-containing gases for the preparation of hydrogen.
- 35 6. The use of a method as claimed in any of claims 1, 2, 3 and 4 for producing sulfur-free hydrocarbon-containing gases for the preparation of hydrogen for operation of a fuel cell.
- 40 7. A copper-containing catalyst comprising from 30 to 99.8% by weight of copper oxide and from 0.2 to 70% by weight of oxides of elements of groups IIB, IIIB, IVB, VIB, VIII, IIIA, and IVA of the Periodic Table of the Elements which are solids up to at least 250°C.
- 45 8. A copper-containing catalyst as claimed in claim 7 or 8 for use in a fuel cell system.

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9. The use of a copper-containing catalyst as claimed in claim 7 or 8 for removing sulfur compounds from hydrocarbon-containing gases.

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